



PATENT ABSTRACTS OF JAPAN

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(21) Application number: **03301044**(22) Date of filing: **21.10.1991**(71) Applicant: **OMRON CORP**(72) Inventor: **HORIE NORISADA
TAKAGI JUNICHI**(54) **OPTICAL COUPLING UNIT AND FIBER
PHOTOELECTRIC SENSOR USING THE SAME**

(57) Abstract:

PURPOSE: To improve the coupling efficiency of an LED and an optical fiber by providing a reflection unit having a light outgoing hole having a very small area and a lens for condensing the outgoing light from the light outgoing hole at the end face of a very small region.

CONSTITUTION: The outgoing light 11 emitted in a Lambert's distribution from a LED 10 is reflected by the reflection region 12 of the reflection unit 13 deposited with gold or aluminum, etc., by evaporation on a reflection surface is converged to the very small (small diameter) region 14 of the reflection unit 13 and is emitted

from the light outgoing hole 15 of the very small area in a section. The light emitted from the light outgoing hole 15 to be an equiv. light source is collimated by a collimating lens 16 mounted on an outside box 30 to the collimated beams of light having no spread. These collimated beams of light can be made incident efficiently on the optical fiber 17. Consequently, the quantity of the outgoing light from the fiber emitting end is increased.

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